<u>REMARKS</u>

I.   <u>Introduction</u>

In response to the Office Action dated September 22, 2005, claims 1, 18, and 35 have been amended. Claims 1-51 remain in the application. Re-examination and re-consideration of the application, as amended, are respectfully requested.

II.   <u>Claim Amendments</u>

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III.   <u>Prior Art Rejections</u>

In paragraphs (1)-(2) of the Office Action, claims 1-51 were rejected under 35 U.S.C. §102(b) as being anticipated by Reed, U.S. Patent No. 3,774,215 or Rich et al. (Rich), U.S. Patent No. 5,636,123. In paragraphs (3)-(4) of the Office Action, claims 1-51 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fleming, U.S. Patent No. 5,748,891, in view of Reed.

The Applicants respectfully traverse the rejections in light of the amendments to the claims presented above and the arguments presented herein. The cited references do not teach nor suggest these various elements of Applicants' independent claims. Specifically, the cited references do not teach nor suggest the limitation of each of the local code generators generates a unique transmitter code such that the first transponder transmits a different code than the second transponder regardless of position of the first transponder and the second transponder as recited in the claims of the present invention.

<u>The Reed Reference</u>

Reed merely describes a position locating system. It is also a position locating system for a vehicle with an onboard means for detecting differences in phase between a reference frequency and received radio-beacon navigation signals. Phase data representative of the detected phase differences is transmitted from the vehicle to a communication station which has associated

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therewith a central processing unit time shared with other communication stations for calculation of vehicle position from required phase data. The calculated position locates the vehicle in any of selectable reference frames requested by the vehicle and is compensated for local beacon signal propagation variations. Position data is transmitted back to the vehicle for indicating vehicle position. To accommodate a plurality of vehicles, transmission time at each communication station is time shared. To communicate with a station, a vehicle selects from a series of time blocks the strongest signal and consequently nearest station and seizes an idle time slot within that time block. Acknowledgement and synchronizing procedures insure accurate synchronization between station and vehicle and prevent vehicles from receiving each other's data.

After the transmission of the phase calibration measurement a hold message received by the vessel-located terminal indicates and is interpreted by the terminal as a request for the terminal to transmit an indication of the frame of reference selected for vessel position information. The vessel operator has the opportunity for selecting any number of reference frames within which the calculated position is displayed, including latitude and longitude, range, and relative bearing to any one of several selectable landmarks identified by number, or any other numerically identified reference frame. A reference frame and landmark selection is made through selector switches 140 by positioning them to include the number identifying the particular reference frame desired. See Col. 11, line 56-Col. 12, line 2.

In order to prevent faulty switch operation from resulting in misleading position data a specific arrangement is preferred for forming the data words representative of the numbered frame representative of the numbered reference frame selection. In particular, FIG. 6 indicates the electronics and switching pattern for one of four reference frame selector switches used in forming the data word representative of reference frame selection. See Col. 12, lines 7-14.

The Rich Reference

Rich merely describes a traffic alert and collision avoidance coding system. It is also a system for coding and transmitting traffic alert and collision avoidance data between vehicles traveling within a given airspace. The airspace is divided into a grid of volume elements, each of which is assigned a unique pseudonoise (PN) code. A vehicle traveling through the airspace determines its position using signals from Global Positioning System (GPS) satellites. The vehicle's

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position places it within one of the volume elements in the airspace. A Traffic Alert and Collision Avoidance System (TCAS) transmitter on the vehicle creates a navigation message that describes the position of the vehicle. A collision avoidance signal is then generated by modulating a carrier signal with the PN code representing the volume element containing the transmitting vehicle and with the navigation message. The collision avoidance signal is transmitted on a common communications channel using time-multiplexing based on a pseudorandom sequence. Other vehicles operating within the same airspace use a TCAS receiver to receive the collision avoidance signals broadcast from each vehicle. Each receiving vehicle in the airspace only tracks collision avoidance signals produced by vehicles located in its own and surrounding volume elements to determine if an impending collision is likely. Specifically, only the navigation messages from vehicles in the same or surrounding volume elements are decoded to determine the position of the other vehicles. Based on calculated vehicle paths, a warning of an impending collision or instructions on how to avoid a collision are provided to the operator of the receiving vehicle.

Each volume element 14a, 14b, . . . 14i of the divided airspace 12 is assigned a unique code that is used to modulate a carrier signal. The unique code assigned to each volume element is based on the location of the volume element on the earth. Under this encoding scheme, two aircraft flying through the same volume element will transmit the same volume element code. Thus, aircraft A and aircraft B, which are shown as both flying through the same volume element 14e in FIG. 2, will transmit the same unique volume element code. As also described more fully below, in addition to the unique code, the carrier signal is modulated by a navigation message that describes the actual location (latitude, longitude and altitude) of the aircraft transmitting the carrier signal.

Aircraft flying through the region of airspace 12 shown in FIG. 2 continuously determine their current position and, based on their position, also determine the unique code of the volume element through which they are flying. The current position of each aircraft is determined using signals received from Global Positioning System (GPS) satellites. In addition to allowing the aircraft to accurately determine its position (latitude, longitude, and altitude), the GPS signals allow the aircraft to determine the volume element in which the aircraft is flying. Based on its position, each aircraft generates and continuously transmits a collision avoidance signal comprising a navigation message describing the precise location of the aircraft, superimposed upon a unique code determined by the volume element in which the aircraft is flying. That is, the collision avoidance

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signal includes data about both the aircraft's GPS-determined position and the volume element in which the aircraft is currently located. See CoL 7, lines 14-45.

The Fleming Reference

Fleming merely describes spread spectrum localizers. It is also a network of localizers determines relative locations in three-dimensional space to within 1 cm by cooperatively measuring propagation times of pseudorandom sequences of electromagnetic impulses. Ranging transmissions may include encoded digital information to increase accuracy. The propagation time is determined from a correlator circuit which provides an analog pseudo-autocorrelation function sampled at discrete time bins. The correlator has a number of integrators, each integrator providing a signal proportional to the time integral of the product of the expected pulse sequence delayed by one of the discrete time bins, and the non-delayed received antenna signal. With the impulses organized as doublets the sampled correlator output can vary considerably in shape depending on where the autocorrelation function peak falls in relation to the nearest bin. Using pattern recognition the time of arrival of the received signal can be determined to within a time much smaller than the separation between bins. Because operation of standard CMOS circuitry generates noise over a large frequency range, only low-noise circuitry operates during transmission and reception. To provide the time accuracy necessary for distancing, a high-frequency clock operates during inter-localizer communications. The high-frequency clock uses a phase-lock loop circuit to increase the clock rate and a programmable delay to provide still finer time graduations. A stage in the low-frequency clock uses low-noise circuitry during transmissions and receptions, and standard circuitry at other times.

The Claims are Patentable Over the Cited References

Independent claims 1, 18, and 35 are generally directed to a network, device, and method for network based transceiver operations. A network in accordance with the present invention comprises a first network node having a first transponder for receiving and transmitting communications signals, said first network node further comprising a first receiver for receiving position signals from a plurality of navigation beacons; and, a second network node having a second transponder for receiving and transmitting said communications signals, said second network node further comprising a second receiver for receiving position signals from a plurality of navigation

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beacons, wherein each of said first and second receivers further include local code generators that are also used as transmitter code generators for said first and second transponders wherein each of the local code generators generates a unique transmitter code such that the first transponder transmits a different code than the second transponder regardless of position of the first transponder and the second transponder.

The Reed reference cited by the Office Action describes a manual method of determine the frame of reference for viewing the locations of certain objects with respect to landmarks. So, for example, an operator can see the longitude and latitude of their vessel with respect to the longitude and latitude of a lighthouse, or the operator can switch the frame of reference to view the position overlain on a map or chart. This is not the same as a local code generator generating a unique transmitter code, much less generating a transmitter code regardless of position of the transponder. Reed merely teaches a change in frame of reference, not a transmitter code selector.

Similarly, the Rich reference cited by the Office Action describes an aircraft that transmits position and a predetermined code to tell other aircraft what airspace they are currently flying through. The predetermined code is not generated by a local code generator, it is generated by the system; further, the transmission of this code is the same for any aircraft that is flying through the volume element, and is completely dependent on position of the transponder. The present invention generates unique codes for each transponder that are position independent.

The ancillary Fleming reference also does not teach or suggest the limitation of each of the local code generators generates a unique transmitter code such that the first transponder transmits a different code than the second transponder regardless of position of the first transponder and the second transponder as recited in the claims of the present invention.

Even when combined, the references do not teach this element of the claims, and therefore the claims are patentable over the cited references. Moreover, the various elements of Applicants' claimed invention together provide operational advantages over Reed, Rich, and Fleming. In addition, Applicants' invention solves problems not recognized by Reed, Rich, and Fleming.

Thus, Applicants submit that independent claims 1, 18, and 35 are allowable over Reed, Rich, and Fleming. Further, dependent claims 1-17, 19-34, and 36-51 are submitted to be allowable over Reed, Rich, and Fleming in the same manner, because they are dependent on independent claims 1, 18, and 35, respectively, and thus contain all the limitations of the independent claims. In

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addition, dependent claims 1-17, 19-34, and 36-51 recite additional novel elements not shown by Reed, Rich, and Fleming.

IV.   Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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